AMENDMENTS TO CLAIMS

The following listing of the claims replaces all prior claim versions and listings.

1. (Currently Amended) A text mining apparatus comprising:

means for generating a sentence structure from an input document, the sentence structure representing a dependency among words;

means for generating a similar structure of patterns having a similar meaning of a partial structure of the sentence structure by performing predetermined conversion operation, including at least change in connection of branches in a graph structure, of the partial structure; and

means for determining the patterns having the similar meaning as the identical pattern and detecting the patterns,

wherein the means for generating the similar structure comprises:

means for performing parallel modification of the sentence structure, the parallel modification being structure modification ~~carrying out the change in connection of the branches so that connecting relationships of the branches in the sentence structure are equal to each other for all~~ including new branch generation for a particular one of nodes corresponding to the words put in a parallel relationship in the sentence structure so that the particular one is connected to each node connected by a branch from the node put in the parallel relationship for the particular one;

means for generating a partial structure of the sentence structure;

means for performing non-directional branching of a directional branch of the sentence structure and/or partial structure;

means for replacing a synonym in the sentence structure and/or partial structure by referring to a synonym dictionary; and

means for performing non-ordering of ordering trees of the sentence structure and/or partial structure, and wherein

the means for generating the similar structure uses the similar structure as an equivalent class of the partial structure of the sentence structure.

2. (Original) A text mining apparatus according to Claim 1, further comprising:

a storage unit that stores a set of documents as a text mining object; and

an analyzing unit that inputs and analyzes the document of the storage unit and obtains the sentence structure,

wherein the analyzing unit analyzes the document, and generates the sentence structure containing a clause having a node and indicating at least a dependency as a directional branch from the node on a modifier to the node on a modifiee.

3. (Cancelled)

4. (Currently Amended) A text mining apparatus comprising:

a storage unit that stores a set of documents as a text mining object;

an analyzing unit that reads and analyzes the document from the storage unit and obtains a sentence structure representing a dependency among words;

a similar-structure generating unit that performs predetermined modification operation, including at least change in connection of branches in a graph structure, of the partial structure of the sentence structure obtained by the analysis of the analyzing unit, and generates a similar structure of patterns having a similar meaning; and

a pattern detecting unit that uses the similar structure generated by the similar-structure

G:\NEC\995\20266\Amend\20266.amd4.doc

generating unit as an equivalent class of the partial structure on the generation source, and detects the pattern,

   wherein the similar-structure generating unit comprises:

   means for performing parallel modification of the sentence structure, the parallel modification being structure modification ~~carrying out the change in connection of the branches so that connecting relationships of the branches in the sentence structure are equal to each other for all~~<u>including new branch generation for a particular one</u> of nodes corresponding to the words put in a parallel relationship in the sentence structure<u> so that the particular one is connected to each node connected by a branch from the node put in the parallel relationship for the particular one</u>;

   means for generating a partial structure of the sentence structure;

   means for performing non-directional branching of a directional branch of the sentence structure and/or partial structure;

   means for replacing a synonym in the sentence structure and/or partial structure by referring to a synonym dictionary; and

   means for performing non-ordering of ordering trees in the sentence structure and/or partial structure, and wherein

   the similar-structure generating unit generates the similar structure of the sentence structure and sets the similar structure as an equivalent class.

   5. (Original) A text mining apparatus according to Claim 4, wherein the pattern detecting unit uses the similar structure as the equivalent class of the partial structure on the generation source, and detects the pattern.

6. (Cancelled)

7. (Original) A text mining apparatus according to Claim 4, further comprising:

means for adjusting the operation so that a user determines how similar patterns are identical and detecting the pattern.

8. (Currently Amended) A text mining apparatus comprising:

a storage unit that stores a set of documents as a text mining object;

an analyzing unit that reads and analyzes the document from the storage unit and obtains a sentence structure representing a dependency among words;

a similar-structure generation adjustment unit that generates a first determination item for determining, from a user input, whether or not the structures are identical ones for every type of differences between the sentence structures;

a similar-structure determination adjustment unit that generates a second determination item for determining, from a user input, whether or not the structures are identical ones for every type of differences between attribute values;

a similar-structure generating unit that performs predetermined conversion operation of a partial structure of the sentence structure obtained by the analyzing unit in accordance with the first determination item generated by the similar-structure generation adjustment unit and generates similar structures having a similar meaning of the partial structure; and

a similar-pattern detecting unit that uses the similar structure generated by the similar-structure generating unit as an equivalent class of the partial structure on the generation source and detects the frequent pattern by ignoring the difference between the attribute values in accordance with the second determination item of the similar-structure determination adjustment

G:\NEC\995\20266\Amend\20266.amd4.doc

unit,

wherein the similar-structure generating unit comprises:

means for performing parallel modification of the sentence structure when the first determination item determines the parallel modification, the parallel modification being structure modification ~~carrying out the change in connection of the branches so that connecting relationships of the branches in the sentence structure are equal to each other for all~~<u>including new branch generation for a particular one</u> of nodes corresponding to the words put in a parallel relationship in the sentence structure <u>so that the particular one is connected to each node connected by a branch from the node put in the parallel relationship for the particular one</u>;

means for generating the partial structure of the sentence structure;

means for performing non-directional branching of a directional branch of the sentence structure and/or partial structure when the first determination item determines the non-directional branching of the directional branch;

means for replacing a synonym in the sentence structure and/or partial structure by referring to a synonym dictionary when the first determination item includes replacement of the synonym; and

means for performing non-ordering of ordering trees of the sentence structure and/or partial structure when the first determination item determines the non-ordering of the ordering trees, and wherein

the similar-structure generating unit generates a similar structure of the sentence structure and sets the similar structure as the equivalent class.

9. (Original) A text mining apparatus according to Claim 8, wherein the analyzing unit analyzes the document, and generates the sentence structure containing a clause having a node

and indicating at least a dependency as a directional branch from the node on a modifier to the node on a modifiee determination, and

the attribute value includes the surface case and/or the information about the attached word, added to the sentence structure.

10. (Original) A text mining apparatus according to Claim 8, wherein the similar-pattern detecting unit detects a frequent similar pattern.

11. (Cancelled)

12. (Currently Amended) A text mining method comprising:

a step of generating, using a computer, a sentence structure from an input document, the sentence structure representing a dependency among words;

a step of generating, using the computer, a similar structure of patterns having a similar meaning of a partial structure of the sentence structure by performing predetermined conversion operation, including at least change in connection of branches in a graph structure, of the partial structure; and

a step of determining the patterns having the similar meaning as the identical pattern and detecting the patterns,

wherein the step of generating the similar structure comprises:

a step of performing parallel modification of the sentence structure, the parallel modification being structure modification ~~carrying out the change in connection of the branches so that connecting relationships of the branches in the sentence structure are equal to each other for all~~including new branch generation for a particular one of nodes corresponding to the words

put in a parallel relationship in the sentence structure <u>so that the particular one is connected to each node connected by a branch from the node put in the parallel relationship for the particular one</u>;

a step of generating a partial structure of the sentence structure;

a step of performing non-directional branching of a directional branch of the sentence structure and/or partial structure;

a step of replacing a synonym in the sentence structure and/or partial structure by referring to a synonym dictionary; and

a step of performing non-ordering of ordering trees in the sentence structure and/or partial structure, and setting the similar structure as an equivalent class of the partial structure.

13. (Original) A text mining method according to Claim 12, further comprising:

a step of inputting and analyzing the document from a storage unit that stores a set of documents as a text mining object and generating the sentence structure containing a clause having a node and indicating at least a dependency as a directional branch from the node on a modifier to the node on a modifiee.

14. (Cancelled)

15. (Currently Amended) A text mining method comprising:

a step of analyzing a document from a storage unit that stores a set of documents as a text mining object and obtaining a sentence structure representing a dependency among words;

a step of performing predetermined modification operation, including at least change in connection of branches in a graph structure, of a partial structure of the sentence structure and

8

generating, using a computer, a similar structure having patterns with a similar meaning;

a step of using the generated similar structures as an equivalent class of the partial structure on the generation source and detecting the pattern,

wherein the step of generating the similar structure comprises:

a step of performing parallel modification of the sentence structure, the parallel modification being structure modification ~~carrying out the change in connection of the branches so that connecting relationships of the branches in the sentence structure are equal to each other for all~~ including new branch generation for a particular one of nodes corresponding to the words put in a parallel relationship in the sentence structure so that the particular one is connected to each node connected by a branch from the node put in the parallel relationship for the particular one;

a step of generating the partial structure of the sentence structure;

a step of performing non-directional branching of the directional branch of the sentence structure and/or partial structure;

a step of replacing a synonym in the sentence structure and/or partial structure by referring to a synonym dictionary; and

a step of performing non-ordering of ordering trees in the sentence structure and/or partial structure, and generating the similar structure of the sentence structure and setting the similar structure as an equivalent class.

16. (Original) A text mining method according to Claim 15, further comprising:

a step of using the similar structure as an equivalent class of the partial structure on the generation source and detecting a frequent pattern.

17. (Cancelled)

18. (Previously Presented) A text mining method according to Claim 15, further comprising:

a step of adjusting the operation so that a user determines how similar patterns are identical and detects the pattern.

19. (Currently Amended) A text mining method comprising:

a step of analyzing a document from a storage unit that stores a set of documents as a text mining object and obtaining a sentence structure representing a dependency among words;

a step of generating, from a user input, a first determination item for determining whether or not the structures are identical ones for every type of differences between sentence structures;

a step of generating, from a user input, a second determination item for determining whether or not the structures are identical ones for every type of differences between attribute values;

a step of performing predetermined modification operation of the partial structure of the sentence structure obtained by the analyzing unit and generating, using a computer, a similar structure having a similar meaning of the partial structure in accordance with the generated first determination item; and

a step of using the generated similar structure as an equivalent class of the partial structure on the generation source and detecting the pattern by ignoring the difference between the attribute values in accordance with the second determination item,

wherein the step of generating the similar structure comprises:

a step of performing parallel modification of the sentence structure when the first

10

determination item determines the parallel modification, the parallel modification being structure modification ~~carrying out the change in connection of the branches so that connecting relationships of the branches in the sentence structure are equal to each other for all~~ including new branch generation for a particular one of nodes corresponding to the words put in a parallel relationship in the sentence structure so that the particular one is connected to each node connected by a branch from the node put in the parallel relationship for the particular one;

a step of generating the partial structure of the sentence structure;

a step of performing non-directional branching of a directional branch of the sentence structure and/or partial structure when the first determination item determines the non-directional branching of the directional branch;

a step of replacing a synonym of the sentence structure and/or partial structure by referring to a synonym dictionary when the first determination item determines the synonym replacement; and

a step of performing non-directional branching of ordering trees of the sentence structure and/or partial structure when the first determination item determines the non-directional branching of the ordering trees, and generating the similar structure of the sentence structure and setting the similar structure as an equivalent class.

20. (Original) A text mining method according to Claim 19, wherein the step of obtaining the sentence structure generates the sentence structure containing a clause having a node and indicating at least a dependency as a directional branch from the node on a modifier to the node on a modifiee, and

the attribute value includes a surface case and/or the information about the attached word, added to the sentence structure.

21. (Original) A text mining method according to Claim 19, wherein the frequent similar pattern is detected.

22-25. (Cancelled)